<u>REMARKS/ARGUMENTS</u>

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-26 are presently active in this case, Claims 1, 9, 12 and 14 amended, and Claims 16-26 added by way of the present amendment.

In the outstanding Office Action, Claims 1, 6, 7, 9, and 12-14 were objected to for informalities noted in the Office Action; Claim 9 was rejected under 35 U.S.C. § 112, second paragraph as being indefinite; Claims 1-11 and 13-15 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication 2005/0185651 to <u>Rinne</u>; and Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over <u>Rinne</u>.

With regard to the rejection of the Claim 9 under 35 U.S.C. § 112, second paragraph, Applicants have amended this claim to correct the informalities noted in the outstanding Office Action. Therefore, the rejection is believed to be overcome. Further, Applicants have amended Claims 1, 12 and 14 to correct informalities discovered in these claims.

With regard to the objection to claims 1, 6, 7, 9, and 12-14 for use of the term "configured to," Applicants respectfully traverse this objection. The Office Action cites MPEP §2111.04 for the general proposition that the terminology "configured to" makes any limitation following this term optional, and therefore "configured to" must be deleted from Claims 1, 6, 7, 9, and 12-14. However, Applicants note that MPEP §2111.04 makes clear that a determination of whether a particular clause limits a claim depends on the specific facts of the case. The term "configured to" is well-known terminology in the art for qualifying the functionality of a general purpose computing or processing device. This may be why MPEP §2111.04 does not list the term "configured to" among the terms that may be objectionable.

Further, Applicants' specification describes the claimed "packet classification unit," "transmission order controller," "measurement unit," "radio resource assignment unit,"

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attaching unit," and "determination unit" as structural features of the invention that are in fact

configured to perform their respective functions described in the specification. For example,

paragraph 41 of Applicants' specification explicitly states that according to one embodiment,

the buffer 15 is a packet storage unit configured to store packets. Applicants submit that this

statement and the specification as a whole make clear to one of ordinary skill in the art that

claimed features which are "configured to" perform some function are in fact programmed to

perform such function, and not merely capable of performing the recited function.

In this regard, Applicants submit that the claimed features recited as "configured to"

perform some function are similar to computer implemented inventions. As discussed in

MPEP § 2106IIC for computer related inventions, it is the intended meaning of terms that

dictates whether claim limitation is to be considered, not whether the limitation is somehow

"functional." Indeed, if a computer invention with recited functionality could be construed as

only optionally requiring the recited functionality as the Office Action asserts, then virtually

every issued software patent would be invalid. This is, of course, improper. Finally, as

noted in MPEP 2173.05(g), a functional limitation must be evaluated and considered, just like

any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the

pertinent art in the context in which it is used.[1]

As Applicants' specification makes clear that the claimed "configured to" units or

devices are programmed to perform the recited functions, and the programming of such

devices to perform a specified function is well known in the art, Applicants respectfully

request that the objection of 1, 6, 7, 9, and 12-14 be withdrawn.

Turning now to the merits, Applicants' invention is directed to a base station and

radio communication system and method that appropriately controls packet transmission

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[1] See MPEP 2173.05(g) Functional Limitations citing *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-[20], 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004),

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when various mobile stations coexist in a radio communication system.[2] Specifically, as

discussed in the background section of Applicants' specification, conventional control

technologies for controlling QoS and packet communications do not allow for controlling

various mobile stations such as (1) a mobile station not requesting any predetermined QoS or

any request values for communicating quality, (2) a mobile station requesting only

predetermined QoS, and (3) mobile stations requesting specific request values for

communication quality.[3] Thus, these conventional control systems have diminished

utilization efficiency of radio resources.[4] Applicants' invention is directed to addressing this

problem.

Specifically, Applicants' independent Claims 1, 14 and 15 require classifying packets

related to a plurality of mobile stations into a "quantitative guarantee type packet having a

request value for communication quality or a relative guarantee type packet not having the

request value for communication quality." As discussed in Applicants' specification, the

quantitative guarantee type mobile station specifies, for example, specific quantities for

transfer speed, transfer delay, or jitter, while the relative guarantee type mobile station does

not include this information, and may include QoS classes.[5] Thus, Applicants' specification

makes clear that the quantitative guarantee type mobile station includes more than the

conventional QoS classes. More specifically, Applicants' specification makes clear that the

"request value for communication quality" is different from QoS class classified according to

traffic characteristics.

This is also made clear by Figure 1 which shows a plurality of mobile stations 20a-

20e, wherein the mobile station 20a includes both a request value for quality as "transfer

speed 1 Mbps" plus a QoS class Diffserv EF. The mobile station 20c includes only a request

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[2] See U.S. 2004/0082364 (Applicants' published specification) at paragraphs 3 and 11.
[3] See Applicants' published specification at paragraph 9.
[4] See Applicants' published specification at paragraph 9.
[5] See Applicants' published specification at paragraphs 35 and 36.

value for quality of "transfer speed 32 kbps", and mobile station 20b and 20e include only QoS classes. These examples further demonstrate to one of ordinary skill in the art that the quantitative guarantee type mobile station includes specific quantitative guarantees, which is different from a conventional QoS class classified according to traffic characteristics.

In contrast, the cited reference to Rinne discloses a system for transmitting packets to a plurality of mobile stations. The system includes a QoS classifier 16 configured to classify packets destined for a plurality of mobile stations, according to QoS class, and a Packets scheduler 22 configured to determine active mobile stations (mobile stations to which the packet is to be transmitted) during the next packet allocation period. Based on the QoS class, a packet (RLC buffer) to be transmitted to the mobile station selected by the packet scheduler 22. Rinne also describes that the QoS class includes quality of service, classes of latency, classes of throughput, classes of delay, and classes of bandwidth, etc. (see paragraph [0068] or Rinne), and that the QoS mechanism could be realized by using labels, tags, and flow labels (see paragraph [0030] or Rinne).

In contrast to the claimed invention, the cited reference to Rinne discloses providing communication transmission based only on QoS classes, without any indication of quantitative guarantee type request values for communication quality. In this regard, the outstanding Office Action cites paragraph [0068] of Rinne as teaching both classifying packets into quantitative guarantee type packets having a request value for communication quality and a relative guarantee packet not having a request value for communication quality. However, paragraph 68 discusses Figure 5 and describes only QoS mapping of IP packets to a radio interface. As seen in Figure 5, different data flows are provided to the QoS classifier where they are classified according to different QoS classes. Paragraphs 69-74 provide a range of traffic class indicators, but do not disclose any specific quantitative guarantee values. Therefore, Rinne does not disclose that the packet classification unit classifies the

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packets into a quantitative guarantee type packet having a request value for communication quality, as required by Applicants' independent Claims 1, 14 and 15.

Thus, Applicants' independent Claims 1, 14 and 15 patentably define over the cited reference to Rinne. Further, as Claims 2-13 depend from Claim 1, these claims also patentably define over the cited reference to Rinne. Nevertheless, Applicants have added new dependent Claims 16-20, which include language for further specifying the quantitative guarantee type packet.
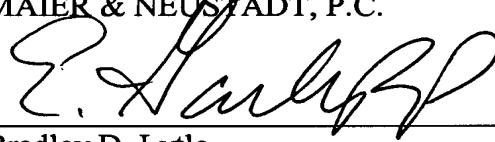
Specifically, Claims 16, 18 and 20 specify that the quantitative guarantee type packet has a request value for a communication quality that is not a QoS class. Further, Claims 17 and 19 specify that the quantitative guarantee type packet has a request value for at least one of a specific quantity of transfer speed, transfer delay or jitter. As Rinne discloses communication based only on QoS classes, this reference does not disclose the request value for communication quality that is not a QoS class (as required by Claims 16, 18, and 20), and further does not disclose a specific quantity of transfer speed, transfer delay or jitter (as required by Claims 17 and 19). Therefore, Applicants' new Claims 16-20 provide further basis for patentability over Rinne.

Further, Applicants have added new dependent Claims 21-26 to clarify the allocation of radio resources among packets. Specifically Claims 21, 23 and 25 recite that if radio resources remain after assignment to the quantitative guarantee type packet in accordance with the request value, the remaining radio resources are assigned to the relative guarantee type packets by the transmission order controller, and Claims 22, 24 and 26 recite that if radio resources still remain after assigned to the relative guarantee type packets, the further remaining radio resources are assigned to the remaining quantitative guarantee type packets. The cited reference to Rinne also does not disclose these features.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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